



**DEPARTMENT OF TRANSPORTATION**

**National Highway Traffic Safety Administration**

**49 CFR Part 571**

**Docket No. NHTSA-2019-0055**

**RIN 2127-AL88**

**Federal Motor Vehicle Safety Standards;**

**Compressed Natural Gas Fuel Container Integrity**

**AGENCY:** National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT).

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** In response to petitions for rulemaking from the American Trucking Associations (ATA) and the Natural Gas Vehicles for America (NGV America), NHTSA is proposing to amend the visual inspection labeling requirement in Federal Motor Vehicle Safety Standard (FMVSS) No. 304, “Compressed natural gas fuel container integrity,” to state that CNG fuel containers used on heavy vehicles should be inspected at least once every 12 months. NHTSA is proposing this change because CNG heavy vehicles are typically used in high-mileage commercial fleet operations and following the current mileage-based inspection interval on the label means conducting multiple visual inspections per year. NHTSA has tentatively concluded multiple visual inspections per year based solely on mileage would not improve vehicle safety for these high-mileage CNG heavy vehicles, and could potentially reduce safety. Because the current periodic visual inspection interval is intended for light vehicles and is consistent with the

operation of these vehicles, no change is proposed to the periodic visual inspection interval for CNG fuel containers on light vehicles.

**DATES:** Comments must be received on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

Proposed compliance date: We propose the compliance date for the amendments in this rulemaking action would be one year after the date of publication of the final rule in the Federal Register. We propose to permit optional early compliance with the amended requirements.

**ADDRESSES:** You may submit comments to the docket number identified in the heading of this document by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the online instructions for submitting comments.
- Mail: Docket Management Facility, M-30, U.S. Department of Transportation, West Building, Ground Floor, Rm. W12-140, 1200 New Jersey Avenue, S.E., Washington, D.C. 20590.
- Hand Delivery or Courier: West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, S.E., between 9 a.m. and 5 p.m. Eastern Time, Monday through Friday, except Federal holidays.
- Fax: 202-493-2251.

Regardless of how you submit your comments, please mention the docket number of this document.

You may also call the Docket at 202-366-9324.

Instructions: For detailed instructions on submitting comments and additional information on the rulemaking process, see the Public Participation heading of the Supplementary Information

section of this document. Note: all comments received will be posted without change to <http://www.regulations.gov>, including any personal information provided.

Privacy Act: In accordance with 5 U.S.C. 553(c), DOT solicits comments from the public to better inform its decision-making process. DOT posts these comments, without edit, including any personal information the commenter provides, to *www.regulations.gov*, as described in the system of records notice (DOT/ALL-14 FDMS), which can be reviewed at [www.transportation.gov/privacy](http://www.transportation.gov/privacy). In order to facilitate comment tracking and response, we encourage commenters to provide their name, or the name of their organization; however, submission of names is completely optional. Whether or not commenters identify themselves, all timely comments will be fully considered.

Docket: For access to the docket to read background documents or comments received, go to *www.regulations.gov*, or the street address listed above. Follow the online instructions for accessing the dockets.

**FOR FURTHER INFORMATION CONTACT:** Ian MacIntire, Office of Crashworthiness Standards (telephone: 202-493-0248) (fax: 202-493-2990), or Daniel Koblenz, Office of Chief Counsel (telephone: 202-366-2992) (fax: 202-366-3820). Address for both officials: National Highway Traffic Safety Administration, U.S. Department of Transportation, 1200 New Jersey Avenue, S.E., West Building, Washington, D.C. 20590.

## **SUPPLEMENTARY INFORMATION:**

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### **I. Executive Summary**

This NPRM proposes to amend the label specified in S7.4(g) of FMVSS No. 304, “Compressed natural gas fuel container integrity,” by modifying the periodic visual inspection interval for CNG fuel containers installed on vehicles with a GVWR greater than 4,536 kg (“heavy vehicles”) to at least every 12 months (with no mileage interval).<sup>1</sup> FMVSS No. 304 (S7.4(g)) currently requires that CNG fuel containers on all vehicles (regardless of GVWR) be permanently affixed with a label that states: “This container should be visually inspected after a motor vehicle accident or fire and at least every 36 months or 36,000 miles, whichever comes first, for damage and deterioration.” NHTSA believes that changing the periodic inspection interval for CNG fuel containers on heavy vehicles by removing the 36,000-mile mileage interval and reducing the 36-month time interval to a 12-month time interval would maintain safety while eliminating unnecessary visual inspections by high-mileage commercial motor carriers. These high-mileage carriers can reach the 36,000-mile mileage mark in as little as three months.

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<sup>1</sup> The term “heavy vehicles” as used in this NPRM includes all vehicles with a GVWR greater than 4,536 kg. Heavy vehicles include both “medium duty” vehicles (with a GVWR greater than 4,536 kg and less than or equal to 11,793 kg) and “heavy duty” vehicles (with a GVWR greater than 11,793 kg), as those terms are used by the Federal Motor Carrier Safety Administration.

NHTSA initiated this rulemaking in response to petitions from the ATA (received April 13, 2016) and the NGV America (received September 16, 2016) requesting that NHTSA amend S7.4(g) of FMVSS No. 304. According to the petitioners, although the label's current inspection interval (every 36,000 miles or 36 months, whichever comes first) is appropriate for light vehicles (vehicles with a GVWR less than or equal to 4,536 kg) which are typically driven between 10,000 miles and 12,000 miles annually, it is inappropriate for heavy vehicles, which are typically used in high-mileage commercial fleet operations. According to the petitioners, heavy duty vehicles (vehicles with a GVWR greater than 11,793 kg) are driven well over 100,000 miles annually and to follow the label's instructions, commercial operators of these vehicles need to conduct a detailed visual inspection of their vehicles' CNG fuel containers 3 to 4 times per year. The petitioners believe this creates an unreasonable burden on these commercial operators without a concomitant safety benefit.

To address this issue, the petitioners request that the agency amend the visual inspection label requirement to remove the mileage interval for visual inspection, while keeping a time interval. However, the two petitioners differ on how long this time interval should be, as well as to what weight classes of vehicle this change should apply. ATA suggests that the visual inspection label recommend an inspection interval of at least every 36 months, whereas NGV America suggests that the label recommend an inspection interval of at least every 12 months. In addition, ATA requests that the revised visual inspection interval apply to CNG fuel containers on high-mileage commercial CNG vehicles, while NGV America requests that the revised visual inspection interval apply to CNG fuel containers on all CNG vehicles.

After careful consideration, NHTSA has decided to partially grant the petitions for rulemaking. NHTSA proposes amending the FMVSS No. 304 visual inspection label to state

that the CNG fuel container should be visually inspected for damage and deterioration after a motor vehicle accident or fire, and either (a) at least every 12 months when installed on a vehicle with a GVWR greater than 4,536 kg or (b) at least every 36 months or 36,000 miles, whichever comes first, when installed on a vehicle with a GVWR less than or equal to 4,536 kg. NHTSA proposes to amend the periodic visual inspection interval for CNG fuel containers on heavy vehicles to “at least once every 12 months,” without including a mileage interval, to account for the fact that these vehicles are commonly used for high-mileage commercial purposes. The current periodic inspection interval (at least every 36,000 miles or 36 months, whichever comes first) was originally intended for light vehicles. NHTSA has tentatively concluded that reducing the frequency of inspections to once every 12 months for heavy vehicles aligns the requirement with the agency’s intent that the inspection interval be reasonable and not excessive, and is appropriately tailored to the vehicle type (high-mileage commercial vehicles). In addition, a 12-month interval for visual inspection aligns with a Federal Motor Carrier Safety Administration (FMCSA) requirement that inspections must be performed annually. (This NPRM does not propose changes to the periodic visual inspection interval for CNG fuel containers on light vehicles because the current periodic inspection interval (at least every 36,000 miles or 36 months, whichever comes first) is consistent with ensuring adequate safeguards for the operation of these vehicles. Petitioner NGV America did not provide information supporting changing the interval to 12 months for the light vehicle population, so that aspect of its petition is denied.)

NHTSA expects that revising the periodic inspection interval for heavy vehicles on the FMVSS No. 304 visual inspection label will result in fewer visual inspections being conducted. Many States require that commercial operators of CNG vehicles comply with the National Fire Protection Association (NFPA) voluntary standard NFPA-52, “Vehicular Natural Gas Fuel

Systems,” which states that CNG fuel containers should be inspected in accordance with the container manufacturer’s instructions (i.e., the required FMVSS No. 304 visual inspection label).<sup>2</sup> Currently, 20 States (Alabama, California, Colorado, Connecticut, Delaware, Hawaii, Florida, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Nebraska, New Hampshire, Rhode Island, Texas, Vermont, Virginia, and Wisconsin) have adopted NFPA-52 in their regulations. If the inspection interval specified by the FMVSS No. 304 label were amended as proposed in this NPRM, the commercial operators of CNG vehicles operating pursuant to NFPA-52, or those following a comparable practice of inspecting the containers as per the interval set forth in the label, would not have to inspect the CNG fuel containers as frequently. Taking into account the cost savings that would result from fewer visual inspections, NHTSA estimates the annual maintenance cost savings from this proposal range from \$52.4 million to \$83.84 million when fully implemented into the fleet, assuming the current CNG heavy vehicle fleet size remains unchanged. The agency believes this is a low estimate of the maintenance cost savings since CNG heavy vehicle sales are projected to steadily increase through 2040.<sup>3</sup>

## **II. Summary of Petitions**

This rulemaking responds to two petitions requesting that NHTSA amend the FMVSS No. 304 visual inspection labeling requirement (S7.4(g)) for CNG fuel containers.

NHTSA received the first of these petitions from American Trucking Associations (ATA) on April 13, 2016.<sup>4</sup> ATA requests that we amend the visual inspection label for CNG fuel containers on high-mileage commercial vehicles to: “This container should be visually

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<sup>2</sup> See <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=52>.

<sup>3</sup> See Baker, et al., “Alternative Fuel Vehicle Forecasts (April 2016),” Texas A&M Transportation Institute, <https://static.tti.tamu.edu/tti.tamu.edu/documents/PRC-14-28F.pdf>.

<sup>4</sup> According to its website, ATA is the largest national trade association for the trucking industry and represents more than 37,000 members covering every type of motor carrier in the U.S.

inspected for damage and/or deterioration after a motor vehicle accident or fire, and at least every 36 months.” ATA states that a visual inspection of the CNG fuel container is “thorough, time consuming and expensive,” and that “requiring that it be done every 36,000 miles for vehicles that often travel over 100,000 miles per year is an unnecessary burden on the industry” because high-mileage commercial fleets undergo an annual safety inspection which includes the fuel system, regardless of the label statement.

ATA states that field data collected by NGV America and the Clean Vehicle Education Foundation (CVEF) on CNG vehicle incidents shows there were 20 CNG fuel container failures in the United States (U.S.) since 1984, and that most of these failures were because of external influences such as impact, heat, or chemical damage. ATA states some of the CNG fuel container failure incidents resulted in changes in voluntary industry codes and standards to ensure safe deployment of CNG vehicle technology, and that as a result of improvements in voluntary container standards, the CNG fuel container is the currently most reliable component within the high-pressure fuel system. According to ATA, the high reliability of CNG fuel containers means that decreasing the frequency of visual inspections would not reduce vehicle safety.

NHTSA received the second petition from NGV America on September 16, 2016.<sup>5</sup> NGV America requests that we amend the statement for CNG fuel containers to: “This container should be visually inspected for damage and/or deterioration after a motor vehicle accident or fire, and at least every 12 months.” Like ATA, NGV America believes that following the inspection interval specified in S7.4(g) for heavy vehicles would lead to detailed visual inspections of CNG fuel containers 3 to 4 times per year without a safety benefit, which

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<sup>5</sup> According to its website, NGV America is a trade association that represents more than 230 companies, environmental groups, and organizations interested in the promotion and use of natural gas as motor fuel.



unreasonably burdens commercial operators. NGV America also believes that, because the inspection involves physically removing and later replacing parts of the vehicle's protective structure around the CNG tank (shielding), unnecessary inspections needlessly increase the risk of damage to the fuel system.

NGV America requests that the new visual inspection label language be required for all vehicles, including light vehicles. However, NGV America does express concern that changing the inspection interval on the label from once every 36 months or 36,000 miles to once every 12 months would be burdensome for most light vehicle owners and operators, as it could potentially triple the frequency with which they currently conduct inspections. NGV America suggests that this problem could be addressed by limiting the applicability of the new label to lower-mileage vehicles, but does not propose specifically how to do so in its petition.

### **III. Background**

#### **a. FMVSS No. 304 and FMCSR 393.68**

FMVSS No. 304 specifies performance and labeling requirements for CNG fuel containers on passenger cars, multipurpose passenger vehicles, trucks, and buses that use CNG as a motor fuel, and to each container designed to store CNG as a motor fuel on-board any motor vehicle. (FMVSS No. 304, S3.) FMVSS No. 304 contains a number of performance requirements for CNG fuel containers to ensure adequate strength, durability, and pressure relief characteristics of CNG fuel containers installed on motor vehicles.

Because proper maintenance of CNG fuel containers is critical to their long-term safety, NHTSA requires that CNG fuel containers be affixed with a label providing for visual inspection periodically and after a motor vehicle accident or fire. This promotes safe use of the containers and reduces the possibility that damage caused by external factors (including motor vehicle

accidents and fires) would go undetected, a situation that could lead to CNG fuel container failure.<sup>6</sup> The requirement for a visual inspection label is found in S7.4(g) of FMVSS No. 304. Currently, CNG fuel containers on all vehicles must be permanently labeled with the statement, “This container should be visually inspected after a motor vehicle accident or fire and at least every 36 months or 36,000 miles, whichever comes first, for damage and deterioration.”<sup>7</sup>

Although NHTSA has the authority to require that all new CNG fuel containers be labeled in accordance with S7.4(g), NHTSA does not have the authority to require that commercial operators of CNG vehicles follow the inspection interval found on the visual inspection label. Rather, the in-use operation, inspection, repair, and maintenance of commercial motor vehicles is regulated federally by the FMCSA.<sup>8</sup> FMCSA regulates commercial motor vehicles primarily through the promulgation and enforcement of Federal Motor Carrier Safety Regulations (FMCSRs).

FMCSR 393.68, “Compressed natural gas fuel containers,” which is administered by FMCSA, directly addresses CNG fuel containers. It requires that all CNG fuel containers conform to FMVSS No. 304, and specifically requires that they meet the labeling requirements. It is the agency’s understanding that commercial carriers that operate CNG vehicles typically treat the inspection interval on the FMVSS No. 304 visual inspection label as the de-facto minimum inspection interval for the industry. (Further, as noted above, 20 States have adopted NFPA Code 52, “Vehicular Natural Gas Fuel Systems,” which specifies that commercial vehicle operators visually inspect CNG fuel containers in accordance with the visual inspection label permanently affixed to the container per FMVSS No. 304.)

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<sup>6</sup> 60 FR 57943, November 24, 1995.

<sup>7</sup> A detailed account of the history of the FMVSS No. 304 visual inspection requirement can be found in the appendix to this document.

<sup>8</sup> See Motor Carrier Safety Act of 1999 (49 U.S.C. § 113).

## **b. FMCSA Research and Recommendation**

In March 2013, FMCSA issued a research report titled, “Natural Gas Systems: Suggested Changes to Truck and Motorcoach Regulations and Inspection Procedures”<sup>9</sup> (herein referred to as the “March 2013 Report”), which provided recommendations for changes to the FMCSRs and other standards<sup>10</sup> to accommodate and facilitate the use of natural gas as a motor fuel in commercial motor vehicles. FMCSA initiated this research project in 2012 to identify whether there are needed changes to the current FMCSRs and inspection procedures to specifically and fully address unique characteristics of natural gas used as a fuel. FMCSA’s goal was to improve the safety of commercial motor vehicle operations by ensuring commercial motor vehicles powered by natural gas meet appropriate safety criteria at all times while operating on public roads. As part of its research, FMCSA conducted an extensive literature review of codes, standards, best practices, and lessons learned related to natural gas fueled heavy vehicles as well as a series of industry site visits to gather feedback.

One recommendation in the March 2013 Report was for NHTSA to modify the required visual inspection label on CNG fuel containers by deleting the reference to mileage for commercial motor vehicles. The report notes the labeling requirement was originally intended for passenger cars, and that commercial motor vehicles, which typically travel more than 160,930 km (100,000 miles) per year, were not taken into account. The report also states that, for commercial motor vehicles, the reference to mileage in the current visual inspection label results in at least three detailed inspections of the CNG fuel containers per year performed by CNG-trained mechanics, which is too burdensome and unnecessary. Accordingly, the report

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<sup>9</sup> FMCSA-RRT-13-044, “Natural Gas Systems: Suggested Changes to Truck and Motorcoach Regulations and Inspection Procedures,” March 2013. <https://rosap.nhtl.bts.gov/view/dot/83>.

<sup>10</sup> North American Standard (inspection procedures and out-of-service criteria) and FMVSS No. 304.

recommends that NHTSA amend the visual inspection label requirement of FMVSS No. 304 to delete the reference to mileage for commercial motor vehicles.

#### **IV. NHTSA's Analysis**

##### **a. Introduction**

In general, CNG heavy vehicles are currently used in commercial fleet operations.<sup>11</sup> Although the U.S. has an extensive natural gas distribution system in place, vehicle fueling infrastructure (i.e., availability of fueling stations) is limited. Therefore, natural gas as a vehicle fuel is most amenable to commercial fleet operations that install their own natural gas fueling stations and/or partner with other fleet operations. Because the initial cost of CNG vehicles is significantly higher than conventional diesel vehicles, commercial carriers who operate CNG vehicles tend to do so in high-mileage operations, so that they can more quickly recover the initial cost.<sup>12</sup> As a result, natural gas as a motor fuel is gaining popularity among medium and heavy duty vehicle fleets such as shuttle, transit, and school buses, refuse trucks, street sweepers, and large haul truck tractor/trailers with centralized fueling operations.<sup>13</sup> Natural gas is most commonly used as fuel by medium and heavy duty vehicle commercial fleet operations, because the price for natural gas has been low relative to diesel and gasoline,<sup>14</sup> and refueling infrastructure can be centrally located for fleet operations.<sup>15</sup>

##### **b. FMVSS No. 304's Inspection Label was Based on Lower-Mileage Light Vehicles**

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<sup>11</sup> Baker, et al., "Alternative Fuel Vehicle Forecasts (April 2016)," Texas A&M Transportation Institute, <https://static.tti.tamu.edu/tti.tamu.edu/documents/PRC-14-28F.pdf>.

<sup>12</sup> U.S. Department of Energy, "Natural Gas Vehicles," Alternative Fuels Data Center, [https://www.afdc.energy.gov/vehicles/natural\\_gas.html](https://www.afdc.energy.gov/vehicles/natural_gas.html).

<sup>13</sup> <https://static.tti.tamu.edu/tti.tamu.edu/documents/PRC-14-28F.pdf>.

<sup>14</sup> For example, the national average price of CNG in April 2018 was about 30 percent less than that of diesel.

<sup>15</sup> Baker, et al., "Alternative Fuel Vehicle Forecasts (April 2016)," Texas A&M Transportation Institute, <https://static.tti.tamu.edu/tti.tamu.edu/documents/PRC-14-28F.pdf>.

The petitioners justify their request to amend the FMVSS No. 304 visual inspection label in part by arguing that the visual inspection label's current 36,000-mile mileage interval was intended for lower-mileage light vehicles, and is not necessarily appropriate for higher mileage heavy vehicles. NHTSA has concluded that the petitioners are correct that the current mileage interval was intended for light vehicles, based on both the regulatory history of the visual inspection label requirement, and a comparison of the average annual vehicle miles traveled (VMT) by light versus heavy vehicles.

NHTSA established the visual inspection label requirement in a final rule issued on November 24, 1995. In that rule, the Agency explained that it chose to recommend a visual inspection interval of 12-months/12,000 miles because it was "consistent with the recommended interval for many motor vehicle warranties and routine maintenance items."<sup>16</sup> This meant that the agency tailored the visual inspection requirement to light vehicles, since the CNG vehicle fleet at the time was primarily comprised of light vehicles. The visual inspection label then changed to the current 36-month/36,000-mile interval in response to petitions for reconsideration of the November 24, 1995 final rule. Like the final rule itself, NHTSA's response to the petitioners for reconsideration of the visual inspection label was based on field data available at the time, which was primarily obtained from light vehicles.<sup>17</sup> The visual inspection label has not been changed since.

A statistical analysis of mileage data collected by the U.S. Federal Highway Administration (FHWA) shows that the 3-year/36,000-mile interval on the inspection label is

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<sup>16</sup> 60 FR 57945, November 24, 1995.

<sup>17</sup> 61 FR 47086, September 6, 1996

more consistent with the average annual VMT of light vehicles than of heavy vehicles.<sup>18</sup> The average annual VMT in 2014 and 2015 for all vehicles (not just CNG vehicles) broken down by vehicle type, is shown in Table 1:

**Table 1. Average annual VMT in 2014 and 2015 by vehicle type\* (all fuel types)**

Year	All Light Vehicles	All Buses	All Single Unit Trucks (SUTs)	All Combination Trucks (CTs)
2014	11,287	18,347	13,123	65,897
2015	11,443	18,258	12,960	61,978
Average	11,365	18,303	13,042	63,938

\*Buses, SUTs, and CTs are overwhelmingly heavy vehicles.

Table 1 indicates that an average light vehicle travels just shy of 12,000 miles over 12 months and equates to approximately 36,000 miles over 36 months. By contrast, the average annual VMT of combination trucks (truck/tractor with trailer) is nearly 6 times that of light vehicles (passenger cars, vans, light trucks, and sport utility vehicles), and the average annual VMT of buses is 1.6 times greater than that of light vehicles.

Although the single unit trucks (SUTs)<sup>19</sup> figure is comparable to that of light vehicles, we think it is likely that CNG SUTs are typically used in high-mileage and centrally fueled fleet operations. This is because CNG vehicles have a relatively high upfront cost to operators, which means that they are generally used in high-mileage operations to recoup that cost and thus tend to have higher annual VMTs than average vehicles in their weight class.<sup>20</sup> Accordingly, although NHTSA does not have precise VMT data on CNG SUTs, the agency believes that the average

<sup>18</sup> Data obtained from the FHWA Office of Highway Policy Information – Annual Vehicle Distance Traveled in Miles and Related Data – 2015 by Highway Category and Vehicle Type.  
<https://www.fhwa.dot.gov/policyinformation/statistics/2015/vml.cfm>.

<sup>19</sup> SUTs are defined as single frame trucks with 2-axes and at least 6 tires or a GVWR greater than 4,536 kg. See  
<https://www.fhwa.dot.gov/policyinformation/statistics/2015/vml.cfm>.

<sup>20</sup> U.S. Department of Energy, “Natural Gas Vehicles,” Alternative Fuels Data Center,  
[https://www.afdc.energy.gov/vehicles/natural\\_gas.html](https://www.afdc.energy.gov/vehicles/natural_gas.html).

annual VMT by CNG SUTs is likely significantly higher than the average reported in Table 1 for all SUTs.

For these reasons, NHTSA agrees with the petitioner's assessment that the current mileage interval on the visual inspection label was intended for light vehicles and is not consistent with medium and heavy duty vehicle CNG fleet operations due to the greater miles traveled annually by the latter vehicles. NHTSA seeks comment on the appropriateness of the current labeling requirement for high-mileage heavy vehicles. In addition, to focus on the average annual VMT for CNG heavy vehicles, the agency seeks comment and input on the average annual VMT of CNG vehicles by vehicle GVWR.

### **c. Cost Burden of Frequent Vehicle Inspections**

According to ATA's petition, following the current periodic visual inspection interval specified on the FMVSS No. 304 visual inspection label (i.e., 36,000 miles or 36 months, whichever comes first), means that CNG fuel containers on heavy duty vehicles need to be inspected three to four times per year, at an annual cost between \$1,500 and \$2,500 per vehicle.<sup>21</sup> NHTSA tentatively agrees that this is a reasonable estimation of the annual cost burden imposed on high-mileage carriers.

According to ATA, the cost of a single inspection ranges between \$200 and \$500 per vehicle with an average cost of \$350. This cost includes inspection by a trained and certified inspector and removal and replacement of shields or covers of the CNG fuel containers before and after the inspection, respectively. In addition, ATA expects a vehicle to have a two-day downtime for the inspection costing about \$150 per day. Using the information provided by

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<sup>21</sup> This estimate is of the cumulative cost of all fuel tank inspections that can be attributed to following the inspection label.

ATA, NHTSA estimates that the average cost of a single inspection is about \$650 ( $\$350 + 2 \times \$150$ ).

This information is supportive of the petitioners' views that multiple visual inspection of the CNG fuel container per year imposes an unreasonable economic burden on operators of high-mileage commercial CNG-fueled heavy vehicles given the apparent absence of a safety need for multiple inspections. NHTSA notes, however, that the agency has not conducted its own research on this subject and thus has no basis on which to independently corroborate those calculations. (Although the March 2013 FMCSA report concluded that frequent visual inspections did impose a cost on operators of commercial vehicles, it did not include hard calculations of what that cost would be.) We therefore seek comment and input on the frequency of visual inspections, cost of an inspection, number of days of downtime per inspection, and the cost of downtime.

#### **d. Potential Safety Risks of Frequent CNG Fuel Container Inspections**

NGVAmerica argues in its petition that multiple detailed visual inspections of CNG fuel containers per year can increase the risk of damage to the fuel system.

According to NGVAmerica, frequent visual inspections can increase risk of damage because visual inspections require that the fuel system's covers and shields be removed and reinstalled. Frequent removal and reinstallation of shielding and covers increases the risk of human error, such as leaving a bolt or fastener loose, over tightening a bolt or fastener, moving a fuel line out of place which could cause it to rub other components, replacing a bolt or fastener with one that is too long that rubs against other components, or replacing a bolt with one that is too short and does not provide proper clamping force. The petitioner believes that this risk cannot be eliminated even with improved training and feedback to the technicians. In addition,



bolts and fasteners have a usable life cycle and frequent removal and replacement may increase wear and tear resulting in premature hardware failure.

The agency seeks comment on the extent of potential damage to the fuel system and the associated safety risks posed by frequent visual inspections.

#### **e. Field data on CNG Vehicle/Container Failures**

ATA states in its petition that field data indicate that there are very few instances of container failures across all CNG-fueled vehicles, and that these failures were due to external influence, such as impact and excessive heat rather than insufficient inspection. NHTSA tentatively agrees with this assessment.

CNG fuel containers are high pressure vessels and need more scrutiny to detect damage and deterioration than fuel tanks of diesel fueled vehicles because failure of a high-pressure vessel can be catastrophic. Nonetheless, according to ATA, between 1984 and 2015 there were only about 20 known CNG fuel container failures in the U.S. and Canada. ATA attributes this low number to the high quality of CNG fuel containers due to voluntary industry standards.

ATA states that the statistic it cites of approximately 20 canister failures from 1984 to 2015 is based on field data collected by the CVEF.<sup>22</sup> NHTSA linked the source of ATA's information to a presentation, "CVEF ACT Training,"<sup>23</sup> which reported there were 68 CNG vehicle "incidents" in North America from 1984 to 2015.

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<sup>22</sup> CVEF was funded by the U.S. Department of Energy's National Renewable Energy Laboratory, but all the data collected has been transferred to and it maintained by NGV America. It is available at <http://www.ngvamerica.org/media-center/technical-and-safety-documents/>.

<sup>23</sup> Horne, Douglas, Dimmick, John, "CVEF ACT Training," originally published on May 14, 2012. The document was updated on September 26, 2016. The document is available from NGV America and in the docket of this NPRM.

NHTSA obtained the CVEF Master Incident List<sup>24</sup> underlying the “68 incidents” statistic, and found that 19 of these incidents were CNG fuel container rupture failures. (The other “incidents” on the list were not container failures; they involved either a CNG leak or a release of CNG by Pressure Release Device (PRD) activation, which are typically caught during the routine pre-trip inspection that drivers must do every time they operate the vehicle.) Of the 19 CNG canister ruptures, 16 occurred in the U.S. and 3 occurred in Canada. Details of the 16 CNG fuel container failures in the U.S., broken down by container type,<sup>25</sup> are shown in Table 2.

**Table 2: Cause of CNG fuel container failure incidents in the U.S. from 1984 to 2015.**

Cause of CNG Fuel Container Failure	Number of CNG Fuel Container Failures by Container Type				
	Type 1	Type 2	Type 3	Type 4	Total
Fire or failure of pressure relief device	0	1	0	1	2
External corrosion	0	0	0	0	0
Overpressurization	1	0	0	0	1
Physical damage	0	0	0	2	2
Combination of overpressurization, physical damage, and stress corrosion cracking	0	3	0	0	3
Stress corrosion cracking from acid/chemical exposure, degradation of glass fiber	0	0	8	0	8
Total	1	4	8	3	16

Among the 16 CNG fuel container failures in the U.S. from 1984 to 2015, one was a Type 1 container, four were Type 2 containers, eight were Type 3 containers, and three were

<sup>24</sup> CVEF Master Incident List is a list of CNG incidents world-wide originally collected and documented by CVEF up to 2015. The document is maintained by NGVAmerica. A copy of the document is available in the docket of this NPRM.

<sup>25</sup> Because different types of CNG fuel containers experience different types of failure modes and are susceptible to different types of failure mechanisms, failures are grouped by container type. There are generally four types of CNG fuel containers. The type designation is based on the way the container is made and the material it is made out of (aluminum, steel, carbon fiber, etc.). Type 1 containers are all metal cylinders (steel or aluminum). Type 2 containers have a thinner metal liner and a composite and wire or metal hoop “wrap” that provides reinforcement for the cylinders. Type 3 containers have a metal liner that is completely wrapped in composite/fiber resin. Type 4 containers are cylinders with a polymer liner wrapped in fiber.

Type 4 containers. Two CNG fuel container failures (one Type 2 and one Type 4) were caused by fire during which the pressure relief device (PRD) failed to operate. One Type 1 container failure was caused by overpressurization by faulty fueling systems. Three Type 2 container failures were caused by a combination of stress corrosion cracking, physical damage, and overpressurization resulting from improper installation of the container on the vehicle. Eight Type 3 container failures were caused by stress corrosion cracking from exposure to chemicals and acid that resulted in degradation of the glass wrap.<sup>26</sup> Two Type 4 container failures were caused by physical damage. One Type 4 container failure was caused by an impact with an overpass during vehicle motion (the container was located on the roof), and another Type 4 container failure was caused by an impact with road debris while the vehicle was in motion (the container was mounted under the floor and not protected from damage). NHTSA notes that it is not known how long prior to some of these failures a visual inspection was performed.

Periodic visual inspections are intended to detect external damage to the CNG fuel containers; it is possible inspections have found anomalies that undetected could have resulted in incidents such as those described above. However, data do not indicate the necessity of multiple visual inspections per year over a single annual inspection. In the 1980s and 1990s, the CNG fleet was composed of taxi cabs, delivery vans, and light trucks, i.e., vehicles whose CNG containers were labeled under FMVSS No. 304 as subject to an inspection interval of every 36 months or 36,000 miles. Given that the extremely low failure rate of CNG fuel containers (19

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<sup>26</sup> In 2001, the American National Standards Institute (ANSI) revised NGV 2, “Basic Requirements for Compressed Natural Gas Vehicle (NGV) Fuel Containers,” a voluntary industry standard for the manufacturers of CNG fuel containers to address the fact that a disproportionate number of container failures involved Type 3 containers that ruptured due to stress corrosion cracking resulting from acid and chemical exposure that degraded the containers’ glass fibers. Since the revision of NGV 2, there have been no known failures of this type.

failures over 33 years)<sup>27</sup> occurred during a time the containers were presumably only inspected every 36 months or 36,000 miles, it does not appear to NHTSA that there is a need for the heavy vehicle containers to be visually inspected every 3 to 4 months (which results from following the wording of the current FMVSS No. 304 label). Thus, NHTSA has tentatively concluded that multiple inspections per year are excessive to ensuring CNG fuel container safety.<sup>28</sup> Accordingly, NHTSA has tentatively concluded that visually inspecting CNG fuel containers multiple times per year does not produce a safety benefit commensurate with the burden of inspection.

The agency seeks comment and input on CNG vehicle incidents in the field, the effectiveness of visual inspections for identifying potential CNG container failures, and the frequency with which inspections conducted every 3- to 4-months reveal safety problems on heavy vehicles.

## **V. Proposed Changes to the Visual Inspection Label**

In consideration of the above, NHTSA is proposing to modify the FMVSS No. 304 label for visual inspection of CNG fuel containers to state: “This container should be visually inspected for damage and deterioration after a motor vehicle accident or fire, and either (a) at least every 12 months when installed on a vehicle with a GVWR greater than 4,536 kg or (b) at least every 36 months or 36,000 miles, whichever comes first, when installed on a vehicle with a GVWR less than or equal to 4,536 kg.”

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<sup>27</sup> To put this figure in perspective, the U.S. Department of Energy estimates that there are over 160,000 natural gas vehicles on U.S. roads today. See [https://www.afdc.energy.gov/vehicles/natural\\_gas.html](https://www.afdc.energy.gov/vehicles/natural_gas.html). NGVAmerica estimates that this figure is even higher at 175,000 vehicles. See <https://www.ngvamerica.org/why-ngv/>.

<sup>28</sup> NHTSA is aware of only the CVEF data on this subject. Commenters knowing of other data are encouraged to submit such information.

NHTSA has tentatively decided to revise the periodic inspection interval for heavy vehicles to at least once every 12 months primarily for two reasons. First, a 12-month inspection period would be consistent and aligned with the annual inspection commercial motor vehicles undergo in accordance with FMCSR 396.17, “Periodic inspection,” which includes inspection of the fuel system and fuel container for leaks, damage, and deterioration.<sup>29</sup> An annual visual inspection interval of CNG fuel containers on heavy vehicles would permit the inspection of the CNG fuel containers along with the rest of the fuel system, which is reasonable and practical.

Second, the agency believes that a 12-month inspection interval for heavy vehicles is appropriate because the agency lacks field data to support moving to a longer interval, such as every 36 months (as was suggested in the March 2013 Report). NHTSA is concerned that because heavy vehicles in commercial fleets travel significantly more miles than light vehicles, the CNG fuel containers on heavy vehicles may be exposed to more wear and tear than CNG fuel containers on light vehicles. In light of this concern, NHTSA has tentatively concluded that that an annual visual inspection interval is appropriate because it is more likely to provide inspectors an opportunity to identify and remedy damage to the CNG fuel container and fuel system prior to a fuel container failure, as compared to a 36-month inspection interval. NHTSA seeks comment on its tentative decision to include a 12-month inspection interval on the visual inspection label for heavy vehicles rather than a 36-month period.

Because NHTSA believes that the current periodic visual inspection interval on the visual inspection label is appropriate for light vehicles, the proposed language for the label includes

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<sup>29</sup> A 12-month inspection interval for CNG fuel containers is also consistent with the CNG fuel system inspection system developed by the NGV America Technology & Development Committee and ATA’s Technology Maintenance Council. See [Compressed Natural Gas Fuel System Inspection Guidance](https://www.ngvamerica.org/2017/12/04/new-cng-fuel-system-inspection-guidance-released/),” NGV America Technology & Development Committee, <https://www.ngvamerica.org/2017/12/04/new-cng-fuel-system-inspection-guidance-released/>.

different periodic inspection intervals for light and heavy vehicles. NHTSA believes that keeping a single, universally applicable label articulating the two different inspection intervals is preferable to requiring different labels for CNG fuel containers depending on the weight class of the vehicles because manufacturers of CNG fuel containers may not know the GVWR of the vehicle on which the fuel container will be installed at the time the manufacturer affixes the label.

In addition, NHTSA believes that whether a vehicle has a GVWR greater than 4,536 kg (i.e., whether a vehicle is a heavy vehicle) is the proper way to determine whether the revised inspection interval is appropriate for that vehicle. Currently available data show nearly all new CNG heavy vehicles are used in commercial high-mileage fleet operations.<sup>30</sup> Because of limited public fueling infrastructure and the high initial cost of CNG vehicles compared to conventional diesel vehicles, CNG as a motor fuel is mainly used in high-mileage commercial fleets that allow for quick recovery of initial cost. Thus, as a practical matter, the revised periodic inspection interval would affect virtually only vehicles with a GVWR greater than 4,536 kg used in commercial fleet operations.

NHTSA seeks comment on CNG vehicles, with a GVWR greater than 4,536 kg, that are used in low-mileage operations and are currently inspected at intervals greater than 12 months. We seek information on the number of such vehicles, whether the proposed 12-month inspection interval would increase the burden without commensurate safety improvements, and appropriate treatment of these vehicles for visual inspection of their CNG fuel containers.

## **VI. Overview of Costs and Benefits**

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<sup>30</sup> Baker, et al., “Alternative Fuel Vehicle Forecasts (April 2016),” Texas A&M Transportation Institute, <https://static.tti.tamu.edu/tti.tamu.edu/documents/PRC-14-28F.pdf>.

ATA stated the cost of a single visual inspection ranges between \$200 and \$500 per vehicle. This cost includes inspection by a trained and qualified inspector and removal and replacement of shields or covers of the CNG fuel containers before and after the inspection. ATA expects a vehicle to have a 2-day downtime for the inspection with a cost of about \$150 per day. Using this information, NHTSA estimates the cost of a single inspection is \$500 ( $\$200 + \$150 \times 2$ ) to \$800 ( $\$500 + \$150 \times 2$ ) with an average of \$650 ( $\$350 + \$150 \times 2$ ). For purposes of estimating costs and benefits, heavy vehicles were broken down into two categories: “medium duty” vehicles (with a GVWR greater than 4,536 kg and less than or equal to 11,793 kg) and “heavy duty” vehicles (with a GVWR greater than 11,793 kg).

For determining the number of CNG heavy vehicles in the fleet, NHTSA reviewed available information on CNG vehicle stock from the U.S. Energy Information Agency (EIA) and from NGVAmerica. According to EIA’s Annual Energy Outlook 2017, there were 2,150 CNG medium duty vehicles and 22,350 CNG heavy duty vehicles on the roads in 2015.<sup>31</sup> By contrast, data from NGVAmerica indicates that there are 25,800 CNG medium duty vehicles and 39,500 CNG heavy duty vehicles.<sup>32</sup> NHTSA believes that NGVAmerica’s data is more accurate than EIA’s data because NGVAmerica obtains stock data from its members, whereas EIA uses vehicle registration data. A count of CNG vehicle registrations would systematically undercount the number of CNG vehicles because many states do not require fuel type to be noted on the vehicle registration, and because many CNG heavy vehicles are conversions after first vehicle purchase. NHTSA therefore used data from NGVAmerica for estimating the fleet size of CNG heavy vehicles.

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<sup>31</sup> U.S. Energy Information Administration, Annual Energy Outlook 2017, <https://www.eia.gov/outlooks/aeo/>.

<sup>32</sup> <http://www.ngvamerica.org/vehicles/for-fleets/>.

For estimating the annual average VMT for heavy vehicles, NHTSA reviewed a published business model<sup>33</sup> for heavy vehicle fleet operations that evaluated the benefit of converting to natural gas fuel over diesel fuel.<sup>34</sup> The model took into account that a CNG heavy vehicle is on average about \$40,000 more expensive than a similar conventional diesel engine heavy vehicle. The model also considered the price differential between diesel and natural gas, the cost of fueling infrastructure, vehicle maintenance costs, and the relative fuel economy of CNG and diesel vehicles to determine the minimum annual average VMT per CNG vehicle for a 20 percent return on investment. The model indicates that for a price differential of \$1.25 per gallon between diesel and natural gas, the minimum annual average VMT per CNG vehicle required to maintain a 20 percent return on investment is 75,000 miles for a medium duty vehicle and 123,000 miles for a heavy duty vehicle. Based on this information, to harmonize these numbers with current label, the agency selected an annual average VMT for medium duty vehicles of 72,000 miles and that for heavy duty vehicles of 108,000 miles to calculate visual inspection costs. Therefore, CNG fuel containers on heavy duty vehicles require on average about 3 visual inspections annually, and those on medium duty vehicles require on average about 2 visual inspections annually under the current visual inspection label specified in FMVSS No. 304. We seek comment on the accuracy of this model, and on the reasonableness of its underlying assumptions.

The proposed periodic visual inspection interval of 12 months for CNG fuel containers on heavy vehicles would reduce the average number of visual inspections in a year by 2 for

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<sup>33</sup> Dee, Anna Lea, "What Set of Conditions Would Make the Business Case to Convert Heavy Trucks to Natural Gas? – a Case Study," National Energy Policy Institute, 2012. This document is available in the docket of this NPRM.

<sup>34</sup> NHTSA did not use the VMT data in the Annual Energy Outlook 2017 (AEO2017) because the agency believes it underestimates the size of the CNG heavy vehicle fleet, and it is not consistent with the results from the business models for CNG vehicle fleet operations.



heavy duty vehicles and by one for medium duty vehicles, assuming that vehicle operators followed the label. Using the above information, NHTSA estimated the total cost savings from the proposed update of the visual inspection label for the CNG heavy vehicle fleet in the future when all the CNG heavy vehicles have CNG fuel containers with the proposed visual inspection label (Table 3). The analysis in Table 3 assumes that the CNG heavy vehicle fleet size in the future when all the CNG heavy vehicles would be equipped with the updated visual inspection label is the same as the current CNG medium and heavy duty vehicle fleet size and assumes that all vehicles will have inspections as directed by the label.

**Table 3. Estimates of annual cost savings from the proposed update of the visual inspection label for CNG heavy vehicles (Estimates in 2017 dollars and based on the current heavy vehicle fleet size).**

	Cost of Inspection		
	Low	Average	High
Cost of Single Inspection (a)	\$500	\$650	\$800
Number of CNG Heavy Duty Vehicles (b)	39,500	39,500	39,500
Number of CNG Medium Duty Vehicles (c)	25,800	25,800	25,800
Number of Inspections Reduced Per Year for Heavy Duty Vehicles by the Proposal (d)	2	2	2
Number of Inspections Reduced Per Year for Medium Duty Vehicles by the Proposal (e)	1	1	1
Cost Reduction for Heavy Duty Vehicles (f) = (a)x(b)x(d) in Millions (M)	\$39.50 M	\$51.35 M	\$63.20 M
Cost Reduction for Medium Duty Vehicles (g) =(a)x(c)x(e) in Millions (M)	\$12.90 M	\$16.77 M	\$20.64 M
Total Cost Saving (f)+(g) in Millions (M)	\$52.40 M	\$68.12 M	\$83.84 M

The potential annual cost savings because of the reduced number of CNG fuel container inspections per year for heavy vehicles ranges between \$52.40 million to \$83.84 million with an average cost savings of \$68.12 million when the proposed inspection label is fully implemented into the fleet, assuming the current CNG heavy vehicle fleet size remains unchanged. The above analysis is likely a low estimate of the total cost saving because projections indicate the annual sale of CNG heavy vehicles used in commercial fleets will increase from 4,250 in 2015 to 68,000

in 2040.<sup>35,36</sup> NHTSA seeks comment on the above analysis and the data used to support the analysis.

As noted above, given the extremely low failure rate of CNG containers in the field (19 failures over 33 years), NHTSA has tentatively concluded that changing the periodic visual inspection interval of CNG fuel containers on heavy vehicles from “36 months or 36,000 miles, whichever comes first,” to an annual inspection would not result in a reduction in safety. NHTSA notes that the agency has reached out to multiple potential sources of CNG vehicle data, including businesses that use CNG trucks, businesses that conduct inspections of CNG trucks, and trade associations that represent users of CNG trucks, for information on potential safety impacts of reduced inspections (in terms of both reduced potential damage discovery and reduced potential damage caused by intrusive tank teardown inspections). While we received some anecdotal feedback about the infrequency with which visual inspections caught potential safety issues, no source could provide us with comprehensive, substantive data on the effectiveness of periodic visual inspections. Accordingly, the agency seeks comment and input on CNG vehicle incidents in the field, especially regarding the effectiveness of multiple annual visual inspections, and the risk of damage to CNG tanks as a result of excessive inspection.

The agency notes that, since it is not changing the requirement that all vehicles need a label, it does not believe that the textual changes to the label proposed here will lead to any significant costs associated with creating and installing the label. NHTSA estimates a de minimis cost impact, as manufacturers would be replacing a current label with a new one with

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<sup>35</sup> Baker, et al., “Alternative Fuel Vehicle Forecasts (April 2016),” Texas A&M Transportation Institute, <https://static.tti.tamu.edu/tti.tamu.edu/documents/PRC-14-28F.pdf>.

<sup>36</sup> While NHTSA did not use the AEO2017 data in its cost/benefit analysis due to underreporting of the current size of the CNG fueled heavy vehicle fleet, we note that the AEO2017 data estimates an increase in the CNG medium and heavy duty vehicle fleet by 2040. According to AEO2017 projected estimates, there would be 16,335 CNG medium duty vehicles and 74,469 CNG heavy duty vehicles in 2040. By contrast, the AEO2017 estimates that in 2015, there were 2,150 CNG medium duty vehicles and 22,350 CNG heavy duty vehicles.

different wording. The new label may need to be slightly larger because of wording changes, and there would be a one-time cost of redesigning the label, but all in all the costs of this rulemaking would be negligible when distributed among all CNG vehicles sold.

## **VII. Proposed Compliance Date**

We believe the proposed change in the visual inspection label on CNG fuel containers would alleviate the cost burden associated with multiple visual inspections per year for heavy vehicles and is supported by CNG fuel container manufacturers, CNG vehicle manufacturers and integrators, operators of CNG-fueled heavy vehicle fleets, and voluntary standards organizations that are members of NGV America.<sup>37</sup> Therefore, we are proposing a compliance date of one year after the date of publication of the final rule in the Federal Register, with optional early compliance permitted. We believe one year is sufficient time to make needed changes to the visual inspection label for CNG fuel containers with no additional cost, and that permitting early compliance will provide manufacturers with flexibility.

## **VIII. Rulemaking Analyses and Notices**

### *Executive Order 12866, Executive Order 13563, and DOT Regulatory Policies and Procedures*

NHTSA has considered the impact of this rulemaking action under Executive Orders 12866 and 13563. This action was not reviewed by the Office of Management and Budget under these executive orders. This NPRM is not considered to be significant under the Department of Transportation's regulatory policies and procedures (44 FR 11034; Feb. 26, 1979). NHTSA is proposing to modify the required label for visual inspection of CNG fuel containers to specify that the container should be visually inspected for damage and deterioration after a motor vehicle

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<sup>37</sup> Members of NGV America include the CSA group (a standards development organization in North America), manufacturers of CNG fuel containers, manufacturers and integrators of CNG-fueled vehicles, and CNG vehicle fleet operators. <http://www.ngvamerica.org/about-us/>.

accident or fire, and either (a) at least every 12 months when installed on a vehicle with a GVWR greater than 4,536 kg or (b) at least every 36 months or 36,000 miles, whichever comes first, when installed on a vehicle with a GVWR less than or equal to 4,536 kg. Based on an analysis of CNG fuel container failures in the field, NHTSA believes this change will not lead to a reduction in safety. NHTSA believes that the only substantive effect of this proposal would be to eliminate unnecessary visual inspections of CNG fuel containers by operators of high-mileage commercial CNG vehicles.

NHTSA estimates the proposed change would potentially reduce the number of visual inspections per year by approximately 2 inspections for heavy duty CNG vehicles and by approximately 1 inspection for medium duty CNG vehicles. The agency further estimates that the elimination of these visual inspections will result in an average annual cost savings of \$68.12 million when fully implemented into the fleet, assuming the current CNG heavy vehicle fleet size remains unchanged.

#### *Executive Order 13771*

Executive Order 13771 titled “Reducing Regulation and Controlling Regulatory Costs,” directs that, unless prohibited by law, whenever an executive department or agency publicly proposes for notice and comment or otherwise promulgates a new regulation, it shall identify at least two existing regulations to be repealed. In addition, any new incremental costs associated with new regulations shall, to the extent permitted by law, be offset by the elimination of existing costs. Only those rules deemed significant under section 3(f) of Executive Order 12866, “Regulatory Planning and Review,” are subject to these requirements. As discussed below, this rule is not a significant rule under Executive Order 12866 and, accordingly, is not subject to the offset requirements of 13771.

NHTSA has determined that this NPRM is a deregulatory action under E.O. 13771, as it imposes no costs on manufacturers of CNG fuel containers, who must already meet the current visual inspection labeling requirement, and it proposes changes to FMVSS No. 304 that would have the effect of reducing the cost burden of multiple visual inspections of CNG fuel containers on heavy vehicles without any loss in safety, as described above.

#### *Regulatory Flexibility Act*

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency is required to publish a notice of proposed rulemaking, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions) unless the head of an agency certifies the proposal will not have a significant economic impact on a substantial number of small entities. The Small Business Administration's regulations at 13 CFR part 121 define a small business, in part, as a business entity "which operates primarily within the United States." (13 CFR part 121.105(a)). SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a proposal will not have a significant economic impact on a substantial number of small entities.

I certify this NPRM would not have a significant impact on a substantial number of small entities. The changes proposed in this NPRM are entirely deregulatory; any small operators who may be affected by this NPRM would see a reduction in maintenance costs because of reduced number of CNG fuel container inspections.

### *National Environmental Policy Act*

NHTSA has analyzed this rulemaking action for the purposes of the National Environmental Policy Act (42 U.S.C. §§ 4321 et seq.), as amended. The agency has determined that implementation of this action will not have an adverse impact on the quality of the human environment. The modification in the visual inspection label for CNG fuel containers would have the consequence of reducing the annual inspection costs for CNG heavy vehicle owners and operators, which would make them more cost-effective in fleet operations and incentivize their purchase by fleet operators.

### *Executive Order 13132 (Federalism)*

NHTSA has examined today's NPRM pursuant to Executive Order 13132 (64 FR 43255; Aug. 10, 1999) and concluded that no additional consultation with States, local governments, or their representatives is mandated beyond the rulemaking process. The agency has concluded the proposal does not have sufficient federalism implications to warrant consultation with State and local officials or the preparation of a federalism summary impact statement. The proposal does not have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

NHTSA rules can have preemptive effect in two ways. First, the National Traffic and Motor Vehicle Safety Act contains an express preemption provision:

"When a motor vehicle safety standard is in effect under this chapter, a State or a political subdivision of a State may prescribe or continue in effect a standard applicable to the same aspect of performance of a motor vehicle or motor vehicle equipment only if the standard is identical to the standard prescribed under this chapter." 49 U.S.C. 30103(b)(1).

It is this statutory command by Congress (and not today's proposed rulemaking) that preempts any non-identical State legislative and administrative law addressing the same aspect of performance, so consultation would be inappropriate.

Second, the Supreme Court has recognized the possibility, in some instances, of implied preemption of State requirements imposed on motor vehicle manufacturers, including sanctions imposed by State tort law. That possibility is dependent upon there being an actual conflict between a FMVSS and the State requirement. If and when such a conflict exists, the Supremacy Clause of the Constitution makes the State requirements unenforceable. See Geier v. American Honda Motor Co., 529 U.S. 861 (2000), finding implied preemption of state tort law on the basis of a conflict discerned by the court,<sup>38</sup> not on the basis of an intent to preempt asserted by the agency itself.

NHTSA has considered, pursuant to Executive Orders 13132 and 12988, whether the proposals of this NPRM could or should preempt State common law causes of action. To this end, the agency has examined the nature (e.g., the language and structure of the regulatory text) and objectives of this proposal and finds that this NPRM is not intended to preempt State tort law that effectively imposes a higher standard on regulated entities than that would be established by today's proposed rule. The change proposed in this NPRM amends a labeling requirement that applies to newly manufactured CNG fuel containers; it does not conflict with the establishment of a higher standard of safety by means of State tort law that applies to the same subject matter (i.e., adequate labeling of CNG fuel containers). Without any conflict, there could not be any implied preemption of state law, including state tort law.

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<sup>38</sup> The conflict was discerned based upon the nature (e.g., the language and structure of the regulatory text) and the safety-related objectives of FMVSS requirements in question and the impact of the State requirements on those objectives.

*Executive Order 12988 (Civil Justice Reform)*

With respect to the review of the promulgation of a new regulation, section 3(b) of Executive Order 12988, "Civil Justice Reform" (61 FR 4729; Feb. 7, 1996), requires Executive agencies make every reasonable effort to ensure the regulation: (1) clearly specifies the preemptive effect; (2) clearly specifies the effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct, while promoting simplification and burden reduction; (4) clearly specifies the retroactive effect, if any; (5) specifies whether administrative proceedings are to be required before parties file suit in court; (6) adequately defines key terms; and (7) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. This document is consistent with that requirement.

Pursuant to this Order, NHTSA notes as follows. The issue of preemption is discussed above. NHTSA notes further there is no requirement that individuals submit a petition for reconsideration or pursue other administrative proceedings before they may file suit in court.



### *Privacy Act*

All submissions, including public comments on this NPRM, will be placed in the docket. Anyone is able to search the electronic form of all documents received into any of our dockets by the name of the individual submitting the document (or signing the document, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the *Federal Register* published on April 11, 2000 (Volume 65, Number 70; Pages 19477–78).

### *Paperwork Reduction Act*

Under the Paperwork Reduction Act of 1995 (PRA), a person is not required to respond to a collection of information by a Federal agency unless the collection displays a valid OMB control number. There are no information collection requirements associated with this NPRM.

### *National Technology Transfer and Advancement Act*

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104-113, as amended by Public Law 107-107 (15 U.S.C. 272 note), directs the agency to evaluate and use voluntary consensus standards in its regulatory activities unless doing so would be inconsistent with applicable law or is otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies, such as the SAE International. The NTTAA directs us to provide Congress (through OMB) with explanations when the agency decides not to use available and applicable voluntary consensus standards.

FMVSS No. 304 has historically drawn largely from ANSI NGV 2, and the proposed changes in this NPRM to the visual inspection label were made in accordance with data provided

by NGV America and ATA and the recommendations developed by industry technical working groups.<sup>39</sup>

#### *Unfunded Mandates Reform Act*

The Unfunded Mandates Reform Act of 1995 (UMRA) requires Federal agencies to prepare a written assessment of the costs, benefits and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local or tribal governments, in the aggregate, or by the private sector, of more than \$100 million annually (adjusted annually for inflation, with base year of 1995). UMRA also requires an agency issuing an NPRM or final rule subject to the Act to select the "least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule." This NPRM would not result in a Federal mandate that will likely result in the expenditure by State, local or tribal governments, in the aggregate, or by the private sector, of more than \$100 million annually (adjusted annually for inflation, with base year of 1995).

#### *Executive Order 13609 (Promoting Regulatory Cooperation)*

The policy statement in section 1 of Executive Order 13609 provides, in part: the regulatory approaches taken by foreign governments may differ from those taken by U.S. regulatory agencies to address similar issues. In some cases, differences between the regulatory approaches of U.S. agencies and those of their foreign counterparts might not be necessary and might impair the ability of American businesses to export and compete internationally. In meeting shared challenges involving health, safety, labor, security, environmental, and other

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<sup>39</sup> The NGV America Technology & Development Committee's Guidance on Fuel System Inspection published in November 2017 specifies annual visual inspection for CNG fuel containers on heavy vehicles as a practical approach to inspection and maintenance of the fuel container and fuel system which would match intervals and procedures with other vehicle maintenance tasks, such as engine oil and filter changes, that are conducted on an annual basis per FMCSR 396.17. The CSA group, which maintains NGV 2, is considering modifying the inspection interval in NGV 2 to an annual inspection following the NGV America Technology & Development Committee's Guidance document.

issues, international regulatory cooperation can identify approaches that are at least as protective as those that are or would be adopted in the absence of such cooperation. International regulatory cooperation can also reduce, eliminate, or prevent unnecessary differences in regulatory requirements.

The European regulation for CNG vehicles, ECE R.110, “I. Specific components of motor vehicles using compressed natural gas (CNG) and/or liquefied natural gas (LNG) in their propulsion system,”<sup>40</sup> requires a detailed visual inspection of CNG fuel containers on vehicles at least every 48 months and after an accident or fire. However, the working pressure of CNG fuel containers in Europe is 20 Megapascals (MPa) (3,000 pounds per square inch (psi)), while that in the U.S. is typically 26 MPa (3,600 psi). The higher container pressure in the U.S. necessitates more frequent visual inspections than that conducted in Europe. Therefore, NHTSA did not consider harmonizing with ECE R.110.

#### *Regulation Identifier Number*

The Department of Transportation assigns a regulation identifier number (RIN) to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. You may use the RIN contained in the heading at the beginning of this document to find this action in the Unified Agenda.

#### *Plain Language*

Executive Order 12866 requires each agency to write all rules in plain language. Application of the principles of plain language includes consideration of the following questions:

- Have we organized the material to suit the public's needs?

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<sup>40</sup> <http://www.unece.org/fileadmin/DAM/trans/main/wp29/wp29regs/2015/R110r3e.pdf>.

- Are the requirements in the rule clearly stated?
- Does the rule contain technical language or jargon that isn't clear?
- Would a different format (grouping and order of sections, use of headings, paragraphing) make the rule easier to understand?
- Would more (but shorter) sections be better?
- Could we improve clarity by adding tables, lists, or diagrams?
- What else could we do to make the rule easier to understand?

If you have any responses to these questions, please write to us with your views.

## **IX. Public Participation**

### **How do I prepare and submit comments?**

- To ensure that your comments are correctly filed in the Docket, please include the Docket Number found in the heading of this document in your comments.
- Your comments must not be more than 15 pages long.<sup>41</sup> NHTSA established this limit to encourage you to write your primary comments in a concise fashion. However, you may attach necessary additional documents to your comments, and there is no limit on the length of the attachments.
- If you are submitting comments electronically as a PDF (Adobe) file, NHTSA asks that the documents be submitted using the Optical Character Recognition (OCR) process, thus allowing NHTSA to search and copy certain portions of your submissions.

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<sup>41</sup> 49 CFR § 553.21

- Please note that pursuant to the Data Quality Act, in order for substantive data to be relied on and used by NHTSA, it must meet the information quality standards set forth in the OMB and DOT Data Quality Act guidelines. Accordingly, NHTSA encourages you to consult the guidelines in preparing your comments. DOT's guidelines may be accessed at <https://www.transportation.gov/regulations/dot-information-dissemination-quality-guidelines>.

### **Tips for Preparing Your Comments:**

When submitting comments, please remember to:

- Identify the rulemaking by docket number and other identifying information (subject heading, Federal Register date and page number).
- Explain why you agree or disagree, suggest alternatives, and substitute language for your requested changes.
- Describe any assumptions you make and provide any technical information and/or data that you used.
- If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- Provide specific examples to illustrate your concerns, and suggest alternatives.
- Explain your views as clearly as possible, avoiding the use of profanity or personal threats.
- To ensure that your comments are considered by the agency, make sure to submit them by the comment period deadline identified in the DATES section above.

For additional guidance on submitting effective comments, visit:

[https://www.regulations.gov/docs/Tips\\_For\\_Submitting\\_Effective\\_Comments.pdf](https://www.regulations.gov/docs/Tips_For_Submitting_Effective_Comments.pdf).

**How can I be sure that my comments were received?**

If you wish Docket Management to notify you upon its receipt of your comments, enclose a self-addressed, stamped postcard in the envelope containing your comments. Upon receiving your comments, Docket Management will return the postcard by mail.

**How do I submit confidential business information?**

If you wish to submit any information under a claim of confidentiality, you should submit three copies of your complete submission, including the information you claim to be confidential business information, to the Chief Counsel, NHTSA, at the address given above under FOR FURTHER INFORMATION CONTACT. In addition, you should submit a copy, from which you have deleted the claimed confidential business information, to the docket at the address given above under ADDRESSES. When you send a comment containing information claimed to be confidential business information, you should include a cover letter setting forth the information specified in our confidential business information regulation. (49 CFR part 512)

**Will the agency consider late comments?**

We will consider all comments received before the close of business on the comment closing date indicated above under DATES. To the extent possible, we will also consider comments that the docket receives after that date. If the docket receives a comment too late for us to consider in developing a final rule (assuming that one is issued), we will consider that comment as an informal suggestion for future rulemaking action.

**How can I read the comments submitted by other people?**

You may read the comments received by the docket at the address given above under ADDRESSES. The hours of the docket are indicated above in the same location. You may also

see the comments on the Internet. To read the comments on the Internet, go to <http://www.regulations.gov>. Follow the online instructions for accessing the dockets.

Please note that even after the comment closing date, we will continue to file relevant information in the docket as it becomes available. Further, some people may submit late comments. Accordingly, we recommend that you periodically check the Docket for new material. You can arrange with the docket to be notified when others file comments in the docket. See [www.regulations.gov](http://www.regulations.gov) for more information.

### **List of Subjects in 49 CFR Part 571**

Imports, motor vehicles, motor vehicle safety.

In consideration of the foregoing, NHTSA proposes to amend 49 CFR part 571 as follows:

### **PART 571—FEDERAL MOTOR VEHICLE SAFETY STANDARDS**

1. The authority citation for part 571 continues to read as follows:

**Authority:** 49 U.S.C. 322, 30111, 30115, 30117, and 30166; delegation of authority at 49 CFR 1.95.

2. In § 571.304, revise paragraph S7.4(g) to read as follows.

**§ 571.304 Standard No. 304; Compressed natural gas fuel container integrity.**

\*\*\*\*\*

S7.4 \*\*\*

(g) The statement: “This container should be visually inspected for damage and deterioration after a motor vehicle accident or fire, and either (a) at least every 12 months when installed on a vehicle with a GVWR greater than 4,536 kg or (b) at least every 36 months or

36,000 miles, whichever comes first, when installed on a vehicle with a GVWR less than or equal to 4,536 kg.”

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Issued in Washington, D.C., under authority delegated in 49 CFR 1.95 and 501.5.

**Heidi Renate King**

Deputy Administrator

**BILLING CODE 4910-59-P**



**The following appendix will not appear in the Code of Federal Regulations**

**X. APPENDIX TO THE PREAMBLE: Regulatory History of the CNG Visual Inspection**

**Label Requirement**

NHTSA first proposed a visual inspection label requirement for CNG fuel containers in a Supplemental Notice of Proposed Rulemaking (SNPRM) on December 19, 1994.<sup>42</sup> The original language proposed for the visual inspection label stated that a CNG fuel container should be periodically inspected at least every 36 months but did not include a mileage requirement, which was consistent with American National Standards Institute (ANSI) Natural Gas Vehicle (NGV) guidelines at that time.<sup>43</sup>

NHTSA received several comments in response to the SNPRM, which the agency incorporated into its November 24, 1995 final rule establishing the visual inspection label requirement.<sup>44</sup> First, in response to comments by Navistar and a 1994 publication by the Natural Gas Vehicle Coalition entitled “Natural Gas Vehicle Inspection Program,” the agency lowered the time interval on the inspection label to 12 months. This change was intended to reduce the possibility that damage caused by external factors would go undetected and lead to container failure. In addition, in response to comments by Ford, the final rule included a mileage interval in addition to a time interval because mileage exposure could also be a factor in leading to premature container failure due to exterior damage. We explained in the final rule that we selected a 12-month or 12,000-mile interval because it was consistent with the recommended interval for many motor vehicle warranties and routine maintenance items. As a result of these

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<sup>42</sup> 59 FR 65299, December 19, 1994.

<sup>43</sup> ANSI NGV 2 - Compressed Natural Gas Vehicle Fuel Containers. Section 2.1.3 Periodic In-Service Inspection states, “Each container shall be visually inspected at least every 36 months, or at the time of any re-installation, for external damage and deterioration.”

<sup>44</sup> 60 FR 57943.

changes, the final rule required that the visual inspection label state that CNG fuel container should be visually inspected for damage and deterioration at least every 12 months or 12,000 miles, whichever comes first.

After issuing the November 24, 1995 final rule, NHTSA received several petitions for reconsideration requesting that the CNG fuel container inspection interval on the CNG fuel container label be changed to every 36 months instead of every 12 months. The petitioners argued that a 36-month time interval for visual inspections harmonized with draft international standards, and moreover that field data suggested that an annual visual inspection time interval would not have prevented any known container failures. The petitioners also expressed concern about the additional cost of annual inspections and the increased risk of container damage due to frequent inspections that require disassembly and assembly of components.

In response to these petitions, the visual inspection label was amended in a final rule issued on September 6, 1996, which changed the label's visual inspection statement to the current interval of "36 months or 36,000 miles, whichever comes first."<sup>45</sup> NHTSA explained in the September 6, 1996 final rule that while visual inspection of a CNG fuel container may detect some conditions that indicate a potential failure, the Agency agreed with the petitioners that a 12-month or 12,000 mile inspection interval would be excessive. Moreover, the Agency noted that a 12-month inspection interval would not have prevented two publicized CNG fuel container failures because they were caused by stress corrosion cracking which is internal to the container and therefore would not have been identifiable during a visual inspection of the container's

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<sup>45</sup> 61 FR 47086, September 6, 1996 final rule.

exterior. The agency also explained that a time interval of 36 months was consistent with industry and voluntary international standards.<sup>46</sup>

NHTSA has not amended the statement on the visual inspection label required under S7.4(g) since the September 6, 1996 final rule.

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<sup>46</sup> Specifically, the redrafted the Natural Gas Vehicle Coalition (NGVC) voluntary standard and the draft International Standards Organization (ISO) standard for CNG cylinder inspection.

